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<b>Notice of Allowability</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/506,661	HAWRYLKO ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Henry S. Hu	1713	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Amendment of January 23, 2007.
2. ☒ The allowed claim(s) is/are 1-20.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All    b) ☐ Some\*    c) ☐ None    of the:
  1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
  - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
    - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
  - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |  |  |
|--|--|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 5. <input type="checkbox"/> Notice of Informal Patent Application                      |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 6. <input type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date _____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08),<br>Paper No./Mail Date _____    | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment                    |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance   |
|  | 9. <input type="checkbox"/> Other _____.   |

### EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with **John H. Hornickel (registration # 29,393, tel: 440-930-3317) on March 2, 2007** to amend Claims 1 and 11 as following:

#### Claim

**Claim 1 at line 7** please insert the sentence of "has a purity of at least 95 weight percent and" to be in-between the word of "carbonate" and the word of "serves"

**Claim 1 at line 7** please replace the word of "scavenger" with the phrase of "light stabilizer by scavenging"

**Claim 11 at line 7** please insert the sentence of "has a purity of at least 95 weight percent and" to be in-between the word of "carbonate" and the word of "serves"

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**Claim 11 at line 8** please replace the word of “scavenger” with the phrase of “light stabilizer by scavenging”

### **DETAILED ACTION**

2. This Office Action is in response to **Amendment** filed on January 23, 2007. With such an amendment, **Claims 1, 6-7, 11-13 and 16-17 were amended, while no claim was added or cancelled.** To be more specific, two parent Claims 1 and 11 were amended to remove the language “chalk like” and to correct several improper language such as “at least about” and the like. The examiner thereby withdraws all 112-2<sup>nd</sup> claim rejections in the previous Final Office Action dated October 25, 2006. With the above examiner’s amendment, both parent Claims 1 and 11 are amended with more clarified wordings with support in specification. **Claims 1-20 are pending** now with two independent claims (Claim 1 and Claim 11). An action follows.

3. Claim rejections under 35 USC 103 rejections in previous **Non-Final** Office Action filed on October 25, 2006 are now removed for the reasons given in paragraphs 4-9 thereafter.

### ***Allowable Subject Matter***

4. Claims 1-20 are allowed.

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5. The following is an examiner's statement of reasons for allowance: The above claims 1-20 are allowed over the closest references:

6. The limitation of amended parent **Claim 1** of present invention relates to **a weather resistant poly(vinyl chloride) compound** comprising two components as:

(a) **poly(vinyl chloride)** and

(b) at least 2 weight parts of **essentially pure calcium carbonate** per 100 weight parts of poly(vinyl chloride), the calcium carbonate having **a particle size less than 10 microns**, wherein the essentially pure calcium carbonate has **a purity of at least 95 weight percent** and serves **as a light stabilizer** by scavenging for free hydrochloric acid generated in poly(vinyl chloride) upon exposure to visible and ultraviolet light.

Other parent **Claim 11** relates to **a process of making** poly(vinyl chloride) compound of **Claim 1** by **mixing the components**. See other limitations of **Claims 2-10 and 12-20**.

7. Applicants have now claimed in **twice-amended** two parent claims including **Claim 1 (composition)** and **Claim 11 (process of making)** an unexpected way of **obtaining** a weather resistant poly(vinyl chloride) compound comprising two components including: (A) poly(vinyl chloride) and (B) at least 2 weight parts of essentially pure calcium carbonate. The key point is that such essentially pure calcium carbonate has a purity of **at least 95 weight percent**, a particle size **less than 10  $\mu$ m** and serves as a **light stabilizer**.

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8. With respect to 103(a) rejection, primary reference **Lehr** only discloses stabilization of vinyl chloride polymers can be effectively achieved with using **barium** carbonate and/or **cadmium** carbonate. It is well known in the art that **calcium carbonate is quite different from barium carbonate and cadmium carbonate in many respects.** Lehr is therefore silent about **two things** as: (A) using calcium carbonate, and (B) such a calcium carbonate is in the essentially pure form which has a purity of at least 95 weight percent and has a specific particle size less than 10  $\mu\text{m}$ .

9. Secondary reference **Hung** may teach **halogenated polymer such as poly(vinyl chloride) can be effectively stabilized by including one or more metal-containing compounds to be useful as heat stabilizers wherein the metal can be calcium, barium or cadmium** (column 1, line 35-39; abstract, line 1-5).

Other secondary reference **Lamond** may teach **dry ground calcium carbonate from nature resource (which is thereby non-precipitated) to the claimed size** can be used as filler in the amount of 10-15 wt% for polymer such as polyester in the course of molding/compounding. The key point is that **Hung never discloses using calcium carbonate as light stabilizer** (see page 9 at bottom section of Remarks). **Therefore, Hung and Lamond in combination or alone cannot teach all the limitations which are silent by Lehr.**

10. Additionally, the present invention has shown in examples along with some comparative examples for making such a composition of polyvinylchloride with essentially pure calcium

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carbonate (see pages 15-23 for **examples 1-16 and comparative examples** along with its **Tables 1-11**). Therefore, all the above-mentioned references, in combination or alone, does not teach or fairly suggest the limitations of present invention.

11. After further examination and search, the examiner found the following prior art did not teach the claimed limitation:

**US 4,977,193 to Croce et al.** has disclosed a procedure to achieve stabilization and foaming of polyvinylchloride resins by a mixture of organotin mercapto acid ester and an diorganotin oxide complex with an ester of an oxygen-containing acid as light stabilizer or thermal stabilizer (abstract, line 1-6; column 1, line 16-23). Although calcium carbonate was added (column 6, line 41). However, **Croce does not mention the particle size, the use of calcium carbonate in the form of chalk such as from Caribbean or to be used as light stabilizer.** Therefore, Croce fails to teach the limitation of present invention.

**US 5,948,492 to Cargile** has disclosed a procedure to make a blow-molded plastic container comprising a homogeneous mixture of a plastic resin, filler such as calcium carbonate and a blowing agent (abstract, line 1-5). However, the polymer **does not include poly(vinyl chloride) or its related copolymer, and Cargile does not mention the use of calcium carbonate in the form of chalk such as from Caribbean or to be used as light stabilizer.** Therefore, Cargile fails to teach the limitation of present invention.

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12. The two key issues on using a specified calcium carbonate to be with polyvinylchloride, the specification is a combination of three things including: (A) essentially pure calcium carbonate has a purity of at least 95 weight percent, (B) a particle size less than 10  $\mu\text{m}$  and (C) serves as a light stabilizer, cannot be overcome by any or the combination of the above references, therefore, the present invention is novel.

13. As of the date of this office action, the examiner has not located or identified any reference that can be used singularly or in combination with another reference including the above references to render the present invention anticipated or obvious to one of the ordinary skill in the art. Therefore, two independent claims including composition **Claim 1** and process **Claim 11** are allowed for the reason listed above. Since the prior art of record fails to teach the present invention, the remaining pending dependent **Claims 2-10 and 12-20** are passed to issue.


14. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

15. Any inquiry concerning this communication or earlier communication from the examiner should be directed to **Dr. Henry S. Hu** whose telephone number is **(571) 272-1103**. The examiner can be reached on Monday through Friday from 9:00 AM –5:00 PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu, can be reached on (571) 272-1114. The **fax** number for the organization where this application or proceeding is assigned is **(571) 273-8300** for all regular communications.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Henry S. Hu

Patent Examiner, Art Unit 1713, USPTO

March 5, 2007



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